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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/916,213      | 07/25/2001  | Brian Wells          | 130109.408          | 6853             |

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EXAMINER

BELL, BRUCE F

ART UNIT

PAPER NUMBER

1746

DATE MAILED: 08/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/916,213

Applicant(s)

WELLS ET AL.

Examiner

Bruce F. Bell

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-20 is/are allowed.
- 6) ☒ Claim(s) 1, 21-27, 37, 38, 40 is/are rejected.
- 7) ☒ Claim(s) 2-17, 28-36 and 39 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☒ Interview Summary (PTO-413) Paper No(s). 6.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

### DETAILED ACTION

The examiner in charge of this application after reconsideration as decided to drop the verbal restriction election made by applicants representative on the phone on 08/04/03 and has included the restricted out claims in the following office action.

#### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 21-25, 37, 38 and 40 are rejected under 35 U.S.C. 102(e) as being anticipated by Reiser (US Patent 6,497,971).

Reiser disclose a fuel cell stack assembly having cathode flow fields for exposing the cathodes to an oxidant, wherein the fuel cell assembly has input and output manifolds defining input and output inner volumes in fluid communication with the cathode flow fields for flowing oxidant through the cathode flow fields. A blower can be mounted within an inner volume defined by a manifold and can be a vane axial or centrifugal blower and can be driven by a variable speed motor. Multiple blowers can be associated with the cell stack assembly and can either push or pull the oxidizer through the cathode flow fields. See abstract. A plurality of sensors can be included for sensing operating characteristics of the fuel cell stack assemblies and can include a controller in

electrical communication with the sensors and blowers for controlling the delivery of the oxidizer by the blower's response to the sensors. The sensors can be of various types such as temperature, voltage, current, oxygen concentration and humidity sensors. See col. 2, line 63 – col. 3, line 3. Variable speed motors are controlled to tailor the flow of oxidant with the needs of the fuel cell stack. See col. 4, lines 26-32. The sensors are shown to be included in a window and can include an air filter and a valve which is controlled by the control mechanism such as a solenoid that controls the airflow through the window responsive to the controller. See col. 6, lines 45-50. The controller is capable of increasing the flow of oxidizer to the fuel cell stack assemblies to increase the reaction rate. See col. 6, lines 63-67.

The prior art of Reiser anticipates the applicants instant invention as set forth above as seen by showing the method of operating a fuel cell system wherein a parameter of voltage is monitored or sensed to cause the blowers to increase or decrease movement of oxidant into the fuel cell stack in order to cause an increased or decreased reaction rate based on the fuel cell stacks needs.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 26, 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reiser (6,497,971).

Reiser is as disclosed above in the 35USC 102 rejection.

Reiser does not teach the use of an air compressor for moving oxidant through the oxidant passages.

The prior art as a whole would have been obvious to one having ordinary skill in the art at the time the instant invention was made because even though an air compressor is not suggested, the prior art of Reiser does teach that the blowers are used for the purpose of moving the oxidant in relation to the fuel cell stack needs and one having ordinary skill in the art would have the ability to use either multiple fans as set forth in Reiser or an air compressor which has air under pressure, to accomplish the needs of the fuels cell. The examiner considers the movement of the air either by multiple blowers or by compressor to be functionally equivalent in such a method, especially since the controller controls the amount of air flows through the system.

***Allowable Subject Matter***

4. Claims 2-20, 28-36 and 39 are allowable over the prior art of record.
5. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach and/or suggest a method for operating a fuel cell stack assembly wherein a purge valve is connected to a fuel passage of the fuel cell stack for a purge duration if the voltage across at least one of the fuel cells is

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less than a defined threshold voltage and the oxidant stream flow rate is increased through the oxidant passage of the fuel cell stack during the purge duration. Further, it is not taught or suggested that the fuel cell operation be shut down if a voltage of at least one fuel cell be less than a defined threshold value during an inter resuscitation period. A computer readable media as set forth in the claims for controlling the operation of the fuel cell stack assembly is also not taught or suggested. The fuel cell system as set forth in the instant claims with respect to a purge valve coupled to the fuel passage and being configured to open if the performance of at least one fuel cell falls below a defined threshold value and having a controller that controls the working of the purge valve and the introduction of the oxidant stream flow into the oxidant passages is also not taught or suggested.

6. Claims 2-17, 28-32 and 39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

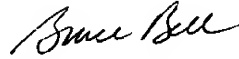
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bruce F. Bell whose telephone number is 703-308-2527.

The examiner can normally be reached on Monday-Friday 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 703-308-4333. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Bruce F. Bell  
Primary Examiner  
Art Unit 1746

BFB  
August 11, 2003